Darwin's champions fight back

Researchers are building their response to the attack by creationism on evolution as interest in Darwin memorabilia continues to grow. **Nigel Williams** reports.

As creationists seek to increase their influence on the scientific agenda, the world's leading scientists urged schools and colleges last month to stop denying the facts of evolution. The national science academies of 67 countries issued a joint statement warning that scientific evidence about the origins of life was being "concealed, denied, or confused". It urged parents and teachers to provide children with the facts about the origins and evolution of life on Earth.

Creationism includes a belief that all forms of life have always existed in their present form and that the world was formed in recent millennia rather than 4,600 million years ago as scientists believe.

The statement was drafted by members of the Inter Academy Panel on International Issues, a global network consisting of 92 science academies. It points out that "within science courses taught in certain public systems of education, scientific evidence, data, and testable theories about the origins and evolution of life on Earth are being concealed, denied or confused with theories not testable by science."

It went on: "We urge decision makers, teachers, and parents to educate all children about the methods and discoveries of science and understanding of the science of nature. Knowledge of the natural world in which they live empowers people to meet human needs and protect the planet."

Martin Rees, president of Britain's science academy, the Royal Society, said: "There is controversy in some parts of the world about the teaching of evolution to pupils and students, so this is a timely statement that makes clear the views of the scientific community."

"I hope this statement will help those who are attempting to uphold the rights of young people to have access to accurate scientific knowledge about the origins and evolution of life on Earth."

The Times Higher Education Supplement reported last month a study of just how much creationism is making inroads into British higher education curricula. Leeds University plans to incorporate one or two compulsory lectures on creationism and intelligent design into its second-year course for zoology and genetics undergraduates at the end of the year, the study finds.

At Leicester University, academics already devote part of a lecture for third-year genetics undergraduates to creationism and intelligent design. In both cases,

Speaking volumes: A record sum has just been paid for a collection of Darwin's works, some shown here, by the Natural History Museum in London. (Photograph: Natural History Museum.)

lecturers intend to present the controversial theories as fallacies irreconcilable with scientific evidence. But the fact that these alternatives to evolution have been proposed for formal discussion has sparked concern among the science community.

The Times Higher study reports that there are at least 14 academics in science departments who consider themselves creationists. Some are heads of departments, seven lecture in the life sciences and seven are professors, they report.

David Read, vice-president of the Royal Society, said: "It would be undesirable for universities to have to spend a lot of precious resources teaching students that creationism and intelligent design are not based on scientific evidence. It is pretty basic stuff," the study reports.

It says there is concern from some of the country's leading scientists at the findings.

John Armour, professor of human genetics at Nottingham University, said he thought giving two lectures on alternatives to evolution was "like geologists spending time discussing the Earth being flat."

Paul Nurse, Nobel Laureate, insisted that creationism should not be discussed as science. "But this issue should be discussed in universities as it would help clarify what is and what is not science," the study says.

But in spite of this battle, Darwin memorabilia and other material are attracting growing interest. The world's largest collection of editions of Charles Darwin's works was bought last month by Britain's Natural History Museum for nearly £1 million, the most expensive acquisition in the museum's 125 year history. Antiquarians, Chris and Michele Kohler collected about 3,500 items, filling four rooms of their house, over 20 years. The collection includes almost everything Darwin published from 1829 onwards.

The museum's director said: "This acquisition makes the museum the ultimate Darwin resource. Darwin brought about a revolution in how humans think about themselves and the natural world. Combining this collection with our existing holdings gives us an unprecedented insight into how the theory of evolution developed, and how Darwin worked."

"Darwin constantly reworked his ideas, and these continual changes can only be seen if all the books are in one place," said Chris Kohler.

And for Darwin's champions, there is another event this month. A rare, "striking" and detailed letter in which Darwin defends his theory of natural selection goes for auction. The six pages are a response to doubts about his theory expressed by the campaigning Victorian clergyman Rev. William Denton.

The letter is new to scholars and no other letter from Darwin to Denton is known to exist. "It's a lovely letter", said Gabriel Heaton, a manuscript specialist at Sotherby's. He wrote the letter on October 15th 1860, within months of the publication of *The Origin of Species*. In it, he patiently and politely defends his idea. "I am very far from being surprised at anyone not accepting my conclusions on the origin of species... I have some confidence that I am in the main right."

The letter going on sale this month, is signed by Darwin. As in *The Origin of Species*, he uses specific examples to make his point. For example, he discusses the origin of deafness in cats and why pigs in Florida are black.

Paul White, of the Darwin Correspondence project at Cambridge University library, agreed the letter was important. "It's unusual in its detail," he said.

The letter is expected to command £20,000–30,000.

With the bicentenary of Darwin's birth and the 150th anniversary of the first publication of *The Origin of Species* due in the next few years, researchers hope that these events will help provide a prop to garner public interest and support and also help stem the anti-evolutionary tide.

Q & A

Lynne Cassimeris

Lynne Cassimeris is a professor in the Department of Biological Sciences at Lehigh University in Bethlehem, Pennsylvania. She grew up near Albany in New York state, received her Ph.D. from the University of North Carolina and was a postdoc at the University of Pennsylvania. She studies mitosis and the microtubule cytoskeleton.

What turned you on to cell biology in the first place? After college, I knew I liked biology but didn't know where I wanted to focus, so I took a job as a lab technician to gain some research experience and sort things out. I spent an afternoon in the library one day — it must have been a slow day in the lab, or maybe my boss was out of town — and read a review on membrane recycling (Steinman *et al.* 1983. Endocytosis and the Recycling of Plasma Membrane. J. Cell Biol. *96*, 1–27). This paper really shocked me because it made me realize how dynamic cells are — that cells are not filled with static structures, as textbooks had led me to believe, but rather that they are these incredibly dynamic things, with components moving all over. That article led me to take a cell biology course co-taught by Conly Rieder. Conly got me interested in mitosis, and after I ran into him at a local bar, he advised me — pushed me would be more like it — to work with Ted Salmon at the University of North Carolina for my Ph.D.

It was a perfect time to join Ted's lab. Ted was just back from a sabbatical with Dick McIntosh, where they had developed methods for photobleaching fluorescent tubulin and demonstrated the rapid turnover of spindle microtubules. Within my first year of graduate school, Tim Mitchison and Marc Kirschner's paper describing microtubule dynamic instability came out (Nature. 1984. *312*, 237–42), as did Ron Vale's purification of the